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- CADD Services Speaking Out
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CADD NEWS

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION INFORMATION TECHNOLOGY

How to Successfully use Today's and Tomorrow's Software

While reading excepts from David E. Weisberg new e- book "*The Engineering Design Revolution: The People, Companies and Computer Systems That Changed Forever the Practice of Engineerin*g" I came across Professor Charlie Miller's (the creator of COGO) guidelines for the successful use of CEAL (which was Charlie's Company's civil engineering software)— Two things struck me about the Guidelines. First, they can apply to any software package that you might use. Second, they are timeless. So just replace the word CEAL with say GEOPAK (or MicroStation) and take them to heart.

• "**Don't try to force CEAL into being something it is not and don't wait for the next release. USE CEAL AS IT IS.**

• **If you try to make CEAL act like some other package you are acquainted with, you will fail. Every software package, like every person, has its own 'personality.' You cannot change it without grave consequences.**

• **Don't fight the system. Learn to use it on its own terms. You can be creative, clever, imaginative, and capable with CEAL, but you cannot be arrogant.**

• **CEAL is a very dynamic system under continuous development. There will always be another release on the way. But, to wait for it would be fruitless. You will wait forever for the next release.**

• **In the meantime, the current release of CEAL contains more capability than any user can master in a lifetime. Best to get on with using the tools at hand."**

I had the privilege of knowing and arguing with Charlie on several occasions and will always value knowing one of the true pioneers of Civil Engineering world. If you would like to learn a bit more about Charlie and the History of CADD and Technology in the AEC industry check out Mr. Weisberg's book at:

http://www.cadhistory.net/

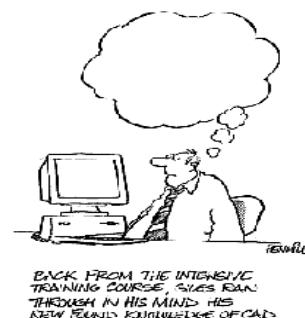# The Training Corner – MicroStation Basics for Civil Engineering

This 2-day entry level training class is designed to teach the basic MicroStation functions to users who will utilize MicroStation in creating NCDOT design projects. Students learn basic concepts of a design file and how to place, modify and manipulate elements and text in a graphic environment. At the completion of this course, students will be able to complete simple drafting assignments. Managers completing this course would be able to review plans using MicroStation **Training Topics:**

1. Working with multiple views and view controls	5. Smartline	11. Patterning
2. Basic MicroStation tools	6. Measurements	12. Reference files
3. AccuDraw and coordinate values	7. Placing and manipulating text	13. Dimensioning
4. Element Modification/ manipulation	8. MicroStation's levels	14. Iplot
	9. Fence manipulation	15. Working with Raster images and creating PDF files
	10. Working with cells, complex shapes, chains, and regions	

Prerequisites: Familiarity with Windows operating system and use of the mouse.

Please note that this is the NCDOT's BASIC MicroStation class. It replaces Essential Microstation Part 1 and Part 2 (COM 126 & COM 127) and the much older Basic and Advanced MicroStation Classes which CADD Services previously offered. **Professional Development Hours (PDH's) 13**

BACK FROM THE INTENSIVE TRAINING COURSE, GILES RAN THROUGH IN HIS MIND HIS NEW FOUND KNOWLEDGE OF CAD.

Training Note

When completing a Training Request form for a particular course, consider checking off other courses that you may need on the same form. (You do not need to submit a separate form for each course.) If you are requesting MicroStation Basics, and you also check off higher level courses, your request for these higher level courses will automatically be activated when you complete the Basics course.

It is important that you strive to attend a class when you receive an invitation from CADD Services. Should you miss three opportunities, we remove your name from the waiting list. Your name is also removed from the list if you RSVP "yes" for a class date, but then don't show up. These policies insure other students on the waiting list have opportunities to take the classes. If you are removed from the training list for either of the above reasons, submit a new training request form to get back on the list. Please don't submit a new request if your priority for taking the class have not increased.

How to get CADD Training

With each new version of software comes the never ending activity of learning how the program's great new features work and which old ones don't . The introduction of MicroStation V8 and its associated programs are no exception.

The additions of unlimited named levels, models and a slew of user interface enhancements can make one's first attempt to use V8 a bit over whelming. If you need training for a new employee or feel you need a refresher course in any of our CADD products, all you need to do is go to the CADD Support Website at:

http://www.ncdot.org/~cadd

Then select Training from the main menu. From the Training page download and fill out the CADD request Training form and mail the form to:

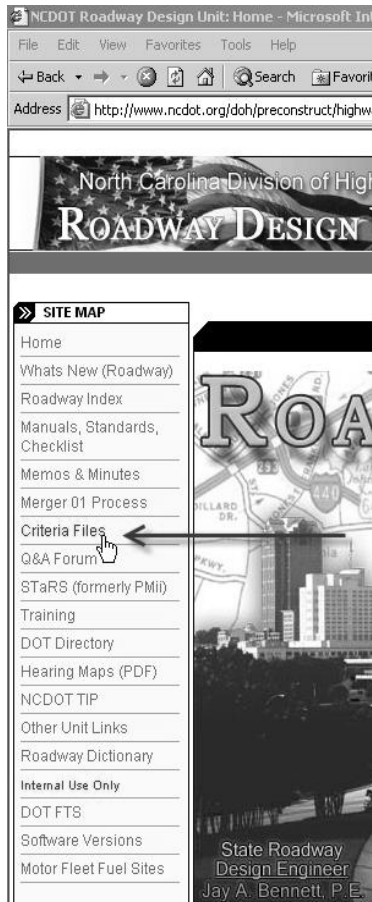**Steve Brown**
Engineering Application Services
1597 Mail Service Center
Raleigh, NC 27699-1597

CADD Services will get you into the next available class provided there is no waiting list.

Remember that it is not necessary to continue to fill out requests if a request is on record. If in doubt email Steve at *sbrown@ncdot.gov*

Also, when making a request, **check off all the classes that you wish to take. (i.e. It's not necessary to complete Microstation before you can request GEOPAK).** Once we receive and enter a request our database keeps up with them.

GEOPAK –Criteria Manual

The most up to date Criteria manual is online and can be found on the Roadway Design Web page. Below is the link to the Roadway Design Home Page. Just copy and paste this link to Internet Explorer (or your browser of choice).

http://www.ncdot.org/doh/preconstruct/highway/roadway/

In the left column menu, click on "Criteria Files" and this should take you to our current NCDOT Criteria links, including the Criteria 2000 (yes, it is still named "2000") manual.

Bentley / AutoDesk Agreement

08 July 2008

SAN RAFAEL, Calif. and EXTON, Pa. – At a joint press conference, Autodesk, Inc. (NASDAQ: ADSK) and Bentley Systems, Incorporated, two of the leading providers of design and infrastructure software, today announced an agreement to expand interoperability between their portfolios of architectural, engineering, and construction (AEC) software. Autodesk and Bentley will exchange software libraries, including Autodesk RealDWG, to improve the ability to read and write the companies' respective DWG and DGN formats in mixed environments with greater fidelity. In addition, the two companies will facilitate work process interoperability between their AEC applications through supporting the reciprocal use of available Application Programming Interfaces (APIs). With this agreement, the companies aim to improve AEC workflows by enabling broader re-use of information generated during the design, construction, and operation of buildings and infrastructure, and by enhancing the ability of project teams to choose among multiple software sources.
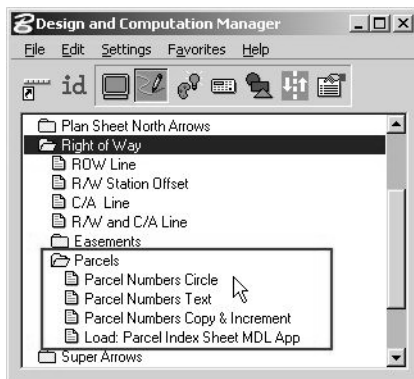
HP5200dtn Printers

HP5200dtn printer's warranties expired in July. Please log all HP5200dtn CADD printer calls to CADD Services and they will forward to Dee Wilcox if needed. Intergraph will work the call from there.

How to Handle a CADD Problem

CADD Services occasionally receives calls from users who have not first contacted the Help Desk with their problem. Although we usually try to help in these situations, it is preferable that the user create a Help Ticket by first calling the Help Desk. There are several advantages to creating the Help Ticket. The user is more assured of receiving prompt help because everyone in CADD Services will see the ticket. Plus, with a ticket we're on the clock to come up with a solution.

GEO 0055 D&C Manager- Property Owners - Oak answers your questions

The following is effective immediately after the next Roadway workspace update 06.04.08

Question: I am unable to place the property owner number and circle in my Right of Way file (RDY ROW DGN) using the D&C Manager. What am I doing wrong?
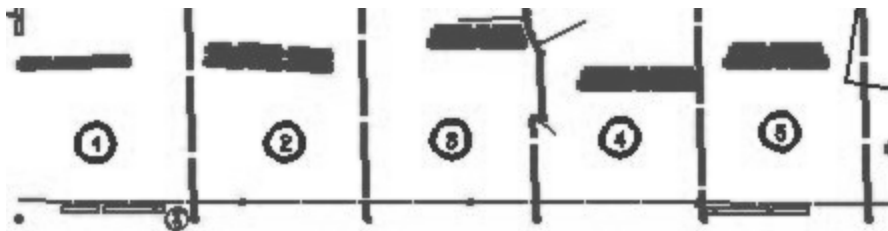
Answer: The Roadway Draft Tools D&C Manager "Right of Way:Parcels" category has been updated.

The intention of the new layout is to make parcels workflow easier to down-stream. Normal practice should follow this sequence while in the Roadway Right of Way file (ROW).

1. Place the parcel number circle cells.

2. Place first parcel number, e.g. "1".

3. Copy and increment the first parcel number.

Create the Parcel Index Sheet.

Note, the 3-series Parcel Index Sheet is only generated for TIP Projects with more than one plan sheet.

References: TIP U-2579B
Roadway Design Manual, Part II, 3-1E, Index of Sheets and Total Sheet Numbers
http://http://www.ncdot.org/doh/preconstruct/altern/value/manuals/RDM2001/part2/chapter3/pt2ch3.pdf

Coming Soon to a CADD PC Near your

The IT Technical Services group is working on a new XP image for all NCDOT machines. Every machine in NCDOT will eventually receive this image. It will consist of only a C drive, with much higher security settings than we are currently using. In order to use MicroStation and GEOPAK with the new image, the user MUST have a domain login. If you do not currently have a domain login, you should start planning now so that you minimize your downtime when your machine is re-imaged.

How do you get a domain login? We suggest starting with a Help Ticket. Note that CADD Services is not in-volved in obtaining domain logins; we are only the bearers of the news.

So when will your machine be re-imaged? Depending on who you talk to, anywhere from a few weeks to never. But in all seriousness you need to start giving it some thought now so that when it does happens you aren't taken completely by surprise. It's reasonable to estimate this will happen before the end of the year.

Iplot Tip— HP4500 Iplot queue faster with Quality set for Draft

For a faster plotting through Microstation Iplot to the HP4500 (using the Bentley HP4500 driver), try changing the Print Quality. Under the HP4500c print queue Properties - Device Settings - InterPlot Device Attributes Properties - Output Parameters Print Quality - Change it from Normal to Draft. Users here at Century Center (Hydro, Project Services) like the speed increase (4 min to 1 min D size) for line work. We just made an additional queue, called HP4500cf and set it to Draft.

Note - Changing this setting has an slight affect on colors and line quality. All colors and lines will be a little lighter. For large solid fills, and aerial type plots you may get some banding and in that case will have to continue to use Normal.

Just let the Division CADD Coordinator test and see what they feel is best for their plots. This is only for plots going through Microstation Iplot to the Iplot queue. If they feel it is good but need the original queue as is, than you can create a new queue called HP4500cf and set it for Draft and leave the original HP4500c queue set to Normal. Have the CADD Coordinator create a new set file for the new queue.

If the users want to do this on the Microsoft or Postscript queue, there is a Quality setting in the Properties screen that they can change per plot. if you have any questions or need assistance contact

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Google Tips - Better Searched Better Results

EXACT PHRASE

What it Does: Searched for an exact phrase

What to Type: "one small step for man"

What you will get: results that include the exact phrase "one small step for man"

EXCLUDED WORDS

What it Does: excludes search results with a particular word or phrase

What to Type: bass—fishing

What you will get: results about bass not related to fishing.

define: FIND MEANING

What it Does: defines a word or phrase

What to Type: define:plethora

What you will get: links to definitions of the word "plethora"

cm in foot CONVERSIONS

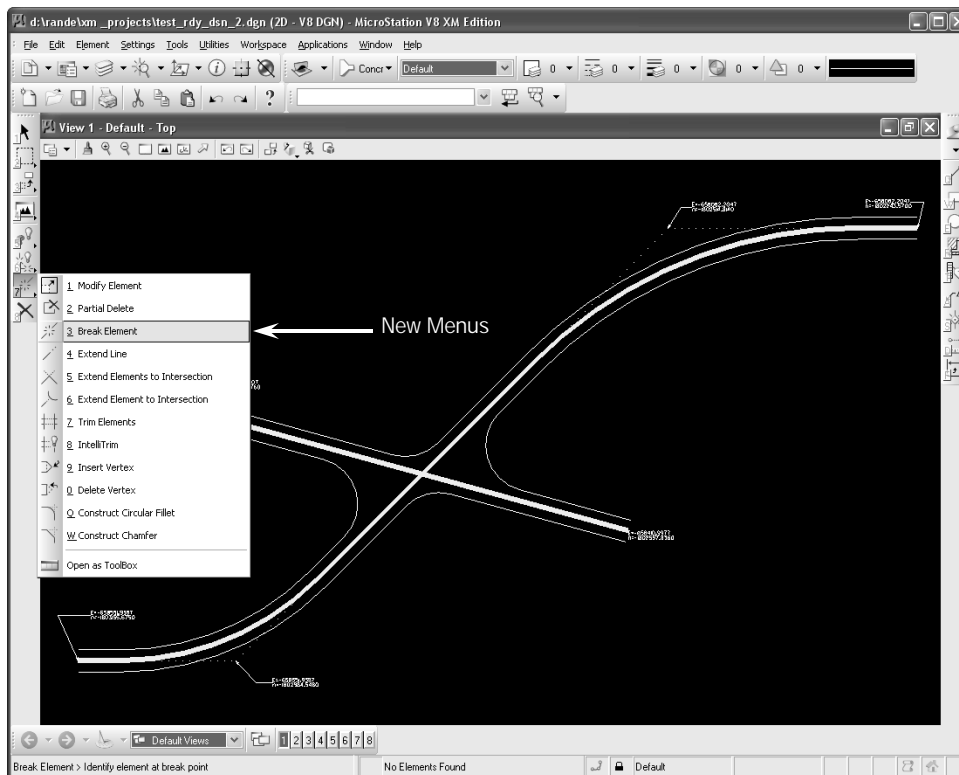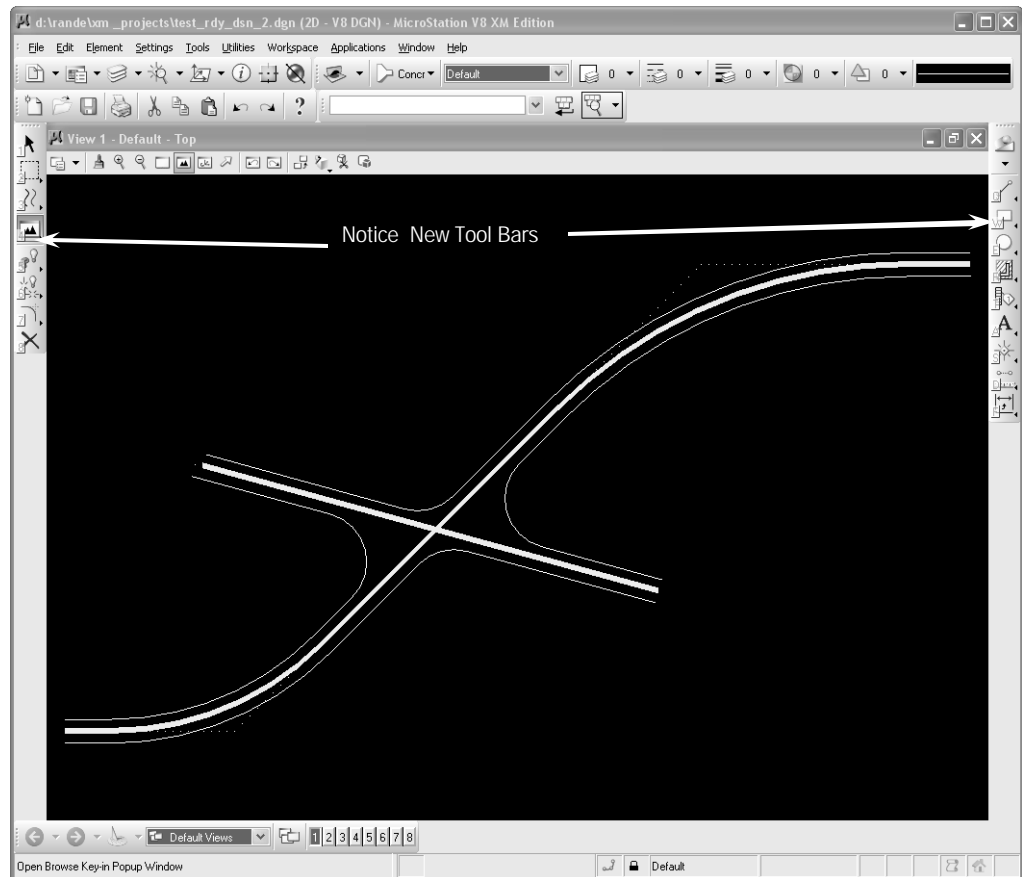**What it Does:** converts units of measure

What to Type: cm in foot, 28C in F, $ in pound, days in fortnight, miles in league, mph in speed of light, etc.

What you will get: the converted answer

MicroStation - A quick peak at MicroStation XM and beyond

Look familiar? But something just doesn't seem right? Welcome to MicroStation XM. The most current version of MicroStation available. Although the NCDOT is still trying to decide if we are going to roll it out or wait for the next version of MicroStation known as ATHENS which is scheduled to be released at the end of the year. I thought you might enjoy a sneak peek of it's interface. (The Athens interface is suppose to be the same as the XM).

While MicroStation XM has been out for a while now it really didn't offer the department any big advantages over V8. With the advent of the new GEOPAK Roadway modeler, which runs only under MicroStation XM CADD Ser-

vices has started to take a serious look at MicroStation and GEOPAK XM. GEOPAK Roadway Modeler is a new dynamic (template based) tool to produce three dimensional final design surfaces. Which is something that we currently have difficultly doing with GEOPAK.

So stay tuned to the CADD News and the NCDOT Portal for any new plans and/or announcements regarding XM and future MicroStation / GEOPAK announcements.

I pointed out a few obvious interface difference between V8 and XM can you identify a few more?

MicroStation V8 –AccuSnap

Does it annoy you that you can't use AccuSnap to place a fence? You can if you hold down the Ctr+Shift keys when you are placing a fence corners..

In addition holding down the Ctr+Shift will turn AccuSnap off in normal use, so if you want to stop AccuSnap for an individual point placement hold down Ctr+Shift.

AccuSnap's settings are under Settings > Snaps > AccuSnap. Generally I have found that the defaults work well and have not fiddled with them.

However, one that is worth turning on in some cases, is Highlight Elements. This makes it clear which element AccuSnap is snapping to, useful in a busy drawing .

CADD Services—Speaking Out

CADD Services personnel not only teach classes, attend meetings and support the department's CADD users but we occasionally get to share our "wisdom" with others in the Highway Engineering and CADD Fields. Just recently:

July 28 , 2008— Rande Robinson gave a presentation entitled Engineering Technology - Past, Present, & Future which looked at how we use and are using CADD & Engineering technology in the Highway/Bridge design arena to see what the future holds. At Florida Institute of Consulting Engineers /Florida DOT Design Conference in Orlando Florida.

July 29, 2008—Bryan Edwards presented a talk on the NCDOT's CADD Workspaces and some of the productivity tools found in them to the NC Triangle chapter of the WTS at the Cardinal Club in Downtown Raleigh.

July 31, 2008 Tim Merrill taught the Chapter 1 Photogrammetry class for the North Carolina Property Mappers Association's Mapping school in Greenville. This group is responsible for the certification of mapping professional primarily in the County Tax offices of North Carolina. Their web page is http://ncpropertymappers.org/

If you would like someone from CADD Services to come and speak at your user group, conference or event feel free to contact us. We like talking about

MicroStation V8 –Inches

Stop calculating decimal feet when wanting to enter inches
 If your drawing is set up to display *decimal feet* (and most highway drawing are) but you want to enter your values in inches, just precede the value by *.. (dot dot).* Not only does this save you time by eliminating the need for calculating the decimal equivalent, it's also easy and quicker.

For example:
to enter 2" simply **keyin** *..2* instead of 0.1666. This will display as *:2* in AccuDraw's keyin window.

For 3.5" simply **keyin** *..3.5* instead of 0.2916666. This will display as *:3.5* in AccuDraw's keyin window.

MicroStation V8 –Hate keying in a colon?

Hate keying in a colon *(:)* to separate the feet from inches when using *AccuDraw*?
Use a semi-colon *(;)*, an apostrophe *(')*, or two periods *(..)* instead!

Thanks to Bentley's *Rudi Wells* and *John Frampton* for these tips.

MicroStation V8 –AccuDraw to N and E

Change AccuDraw settings to N and E
 Use these keyins to switch AccuDraw between Northings/Eastings and X/Y:

accudraw settings northeast
accudraw settings xy

ITWest is on the Move

ITWest (aka the Hickory Training and Support Center) has lost it's lease at CVCC. This means that we will be moving from our current location on the CVCC East Campus to a new "undisclosed location" sometime after September 30, 2008. A request for space proposal was published on July 7, 2008 with Bids due by July 18, 2008. After which we should know more (we hope). For more (as it becomes available) up to date information check out the NCDOT Intranet CADD Training Page.

DualCAD—Free MicroStation Compatible Program

Ever wanted to take a drawing home from the office to work on? Our maybe you would like to use a CADD program at home to do a bit of landscaping or remodeling. Now thanks to Pangaea Cad Solutions you can download the Freeware CAD Application– DualCAD for your own use. Here is the description from Pangaea Website:

DualCAD is a 100% Microstation editor developed by Pangaea Cad Solutions.   DualCAD will edit or redline both V7 and V8 Microstation files.   DualCAD handles resource files, truetype fonts and user defined linestyles. You can also attach both raster and reference files to your drawing You can create clip regions for the reference files , scale, rotate and move them. You can create cell libraries and add cells to them. DualCAD also has built in macro language based on QBasic. QBasic is about as simple as a programming language can get so people with no programming experience can still create useful macros. Create your next project using DualCAD and be confident that both Microstation and AutoCAD users will be able to call up your drawings without any problems.

If you would like to download Dualcad and give it a try give it a try the URL is:

http://www.pcscad.com/index.html

North Carolina Department of
Transportation Information Technology

NCDOT
Information Technology
Engineering Technology Systems
Engineering Applications Service
CADD Services

  http://www.ncdot.org/~cadd

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The Last Word— Tips for Effective Email Communications

With the rollout of the NCDOT's new email system here are 10 tips for effective and professional e-mail conduct.

1. Be informal, not Sloppy— since your email reflects on you and the NCDOT pay attention to your spelling, grammar and punctuation.

2. Keep Messages Brief and to the point—you aren't writing a book so try to keep the message focused on the subject.

3. Use BCC and CC appropriately— Don't use BCC to hide things from people and watch the use of CC since it clutters up other peoples mail boxes. Copy only people directly involved. Anyone else is a waste of time.

4. Don't use email to avoid personal contact—pick up the phone and talk to people . Don't underestimate the value of talking to someone either face-to-face or over the phone.

5. Remember email isn't private—don't type anything you don't want the whole world to see.

6. Include contact information in your signature—mailing address, phone and fax numbers along with your email address.

7. Summarize discussions—Instead of forwarding longs groups of previous emails.

8. Be sparing with group emails— also don't reply to all unless it is appropriate.

9. Use the Subject field—It should indicate your content and purpose.

10. Finally don't send chain letter, virus warnings and junk mail—most people get to much of this stuff already.